

THE
MORRILL LAND GRANT.

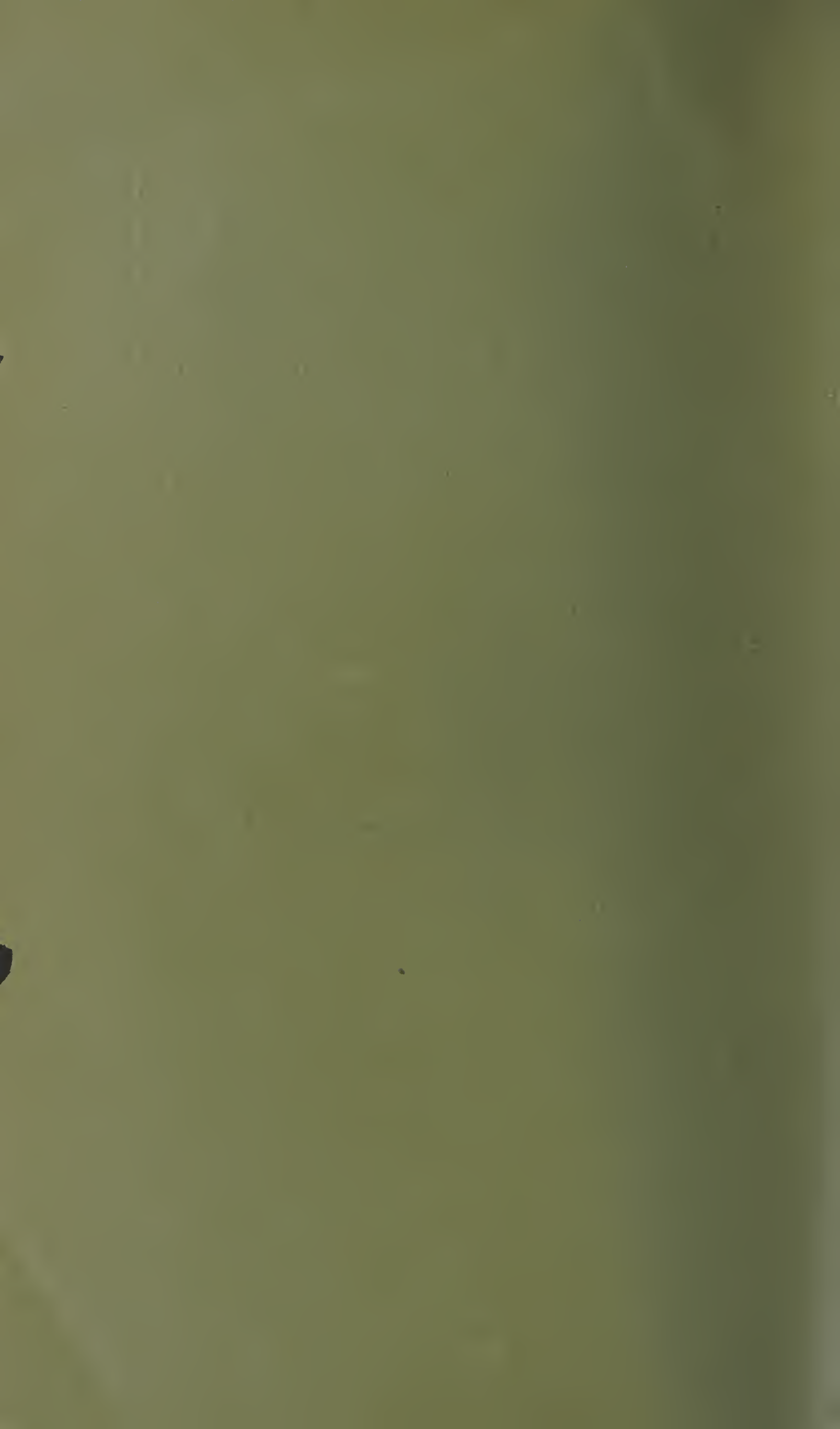
A MEMORIAL ADDRESS

DELIVERED AT THE MASSACHUSETTS AGRICULTURAL COLLEGE,
JUNE 21st, 1887, AT THE CELEBRATION OF THE TWENTY-
FIFTH ANNIVERSARY OF THE PASSAGE OF
THE ACT.

CHARLES KENDALL ADAMS, LL. D.,

President of Cornell University.

AMHERST, MASS.:
J. E. WILLIAMS, BOOK AND JOB PRINTER.
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It was a remarkable evidence of the confidence and the composure of our federal legislature that in 1862, just twenty-five years ago, they were able to give their thoughts to the framing of that far-reaching act, in commemoration of which we are to-day assembled. It was at one of the most anxious, if not one of the darkest periods of our terrible war. The first great organized advance of the federal forces was just coming to a disastrous end. The Peninsula Campaign in which were centered all the nation's hopes had taken time for the most complete preparation in order that no repulse might be possible. Fair Oaks, Gaines Mill, Mechanicsville, Cold Harbor, Malvern Hill,—names that even now send a shudder into thousands of American homes,—had followed in rapid succession, and our baffled army took up its retreat on the second of July, the very day on which, by the signature of the President, the act in which we have now so much interest, became a law. Little did the people think that at the very moment they were watching, with bated breath and tearful eyes for every new sign of success or repulse, there was going forward to completion in the halls of legislation at the National Capitol, a great act of statesmanship which in after years would bring the people together, as we are assembled here to-day.

And yet a great act of statesmanship it was. In the few moments I shall detain you it will be my effort to show that its spirit was conceived in accordance with the best traditions of our country, that its

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provisions were in harmonious accord with the general spirit of the time, and that it was fraught with the means of incalculable advantage to the nation. To these three considerations, then, I briefly invite your attention.

Within the last twenty-five years the policy of rendering national and state aid to educational institutions has sometimes been gravely questioned. It has been asserted that the work of education, in any other than a purely elementary sense, should be left to the care of private benevolence. This, however, was not the doctrine of the fathers. As was so eloquently shown fifty years ago, when the orator selected to represent Harvard, and Amherst, and Williams pleaded the cause of the colleges before the Legislature of Massachusetts, it was the states acting in their organized capacity, that provided for the means of higher education as well as for the common schools.

Look at the facts of that early history. Years before the famous common school law was passed, provision had been made for the founding of a college, by means of a tax levied upon the whole people of the Colony. As Mr. Everett said, scarcely had the feet of the Pilgrims taken hold of Plymouth Rock, when a year's rate of the Colony was levied in order that the higher learning might have a home in the New World. Nor was the child of this parentage left to any such precarious support as might be afforded by private benevolence. The Court Records of Massachusetts in the colonial period are sprinkled over with evidences of the most solicitous care. It was in the days of poverty. The subsistence of the president and the professors or tutors, as they were then called, was immediately dependent on the bounty of the commonwealth. Appropriations for buildings and for lands were from time to time made. The income of the ferry between Boston and Cambridge was appropriated by the General Court to the use of the college. The legislature selected the controlling board. In short, Harvard College was an institution of the government, founded by it, supported by it and controlled by it. Before the days of independence arrived, more than a hundred different statutes had been spread upon the legislative record for the purpose of guiding and assisting this child of the infant state. Even in the constitution of 1780 it was declared forever to be the duty of the legislature to encourage higher learning and especially the University at Cambridge. And it was not until the sons of the college had multiplied and grown rich, that the legisla-

ture said to them as late as 1865 : you can now care for your benignant mother better than I can, therefore I pension her off and entrust her fortunes to your generous keeping.

The policy of Massachusetts was the policy of Connecticut. Long before Elihu Yale gave the final impulse for the founding of the college which was to bear his name, the General Court had carefully considered the establishment of such an institution. The subject was postponed from time to time, not because there was any question as to the propriety of founding such an institution ; but because the population was as yet too sparse and too poor to furnish the pupils for two colleges in New England. And so it was not till more than sixty years had passed after the founding of Harvard that the second New England College was established. But after its establishment its history was much like that of its elder sister. During the whole of the last century, as the first President Dwight has said in his History, it was to the bounty of the Legislature of Connecticut that the support of Yale College was chiefly due. Again and again all other resources failed. It was the legislature that erected old Connecticut Hall and gave to it the name of its benefactor.

Then look at the history of Dartmouth. The college began as a work of charity. Gradually it grew into something more than a secondary school. But during the years of its early growth, it never hesitated to call for aid upon the Legislature of New Hampshire ; and its call was seldom heard in vain. It educated many of the sons of Vermont, and in due time it called upon the Green Mountain State for its share of assistance. A cheerful recognition of the obligation was the result. The land of a township was given to the college, and a record of the fact was stamped into the history and upon the map of the state by giving to the town the name of the college president.

What was true of the method that prevailed in New England was also true of the South. William and Mary, the second college established in the Colonies, took its name from the royal benefactors who made the first large contribution for its support out of the public treasury. The Colony was also taxed in behalf of the institution. A part of the value of every pound of tobacco raised in Virginia had to go into the treasury for the benefit of the college. This continued throughout colonial days. And when Jefferson conceived the plan of the University of Virginia, in some respects the grandest ed-

educational project ever devised in America, though he was inclined to intrust less authority to the government than any other of our forefathers, he endeavored to make the institution as much a part of the educational system of the state as were the common schools themselves.

This method of supporting the colleges, moreover, was not only universal, it was also effectual in that it planted and nourished into maturity colleges of a high order of merit even in the infant days of our national life. Not only were admirable scholars made, but they were made in large numbers. The standards of those days, it is true, were somewhat different from the standards of our days; but one who looks at what was done, while recognizing great differences, will hesitate long before he pronounces them inferior. A recent and eminent superintendent of education in your own state not long since pronounced the opinion that the standards of higher education in colonial days were not simply relatively, but actually higher than the standards of the second half of the nineteenth century. I am not here to corroborate this statement or even to express an opinion on that point. But we may regard it as certain that the schools that could train the men of revolutionary days were efficient and were among the most valuable institutions of colonial time.

And when we pass on from colonial days to the days of the republic, we find that the propriety and the justice of these methods were universally recognized. That first great ordinance which still sheds its benign influence over the Northwest, provided that "Schools and the means of education shall forever be encouraged." And from the day of that benignant provision to the present time, no territory has been organized and no state has been admitted to the Union without provision that a part of its domain shall be set apart for higher learning as well as a part for the common schools.

Thus it is that I hold the Land Grant of 1862 to have been in strict accordance with the best traditions of our educational history.

The second part of my thesis is that the Morrill Land Grant was in strict accordance with the spirit of the present time.

We, doubtless, sometimes talk flippantly and unwisely of what we call the spirit of the age. And yet the age in which we live has certain peculiarities which we can hardly go astray in trying to characterize. They are so distinctly marked, indeed they are so generally acknowledged and understood that even to speak of them, subjects one to the charge of dealing with the common-place. But the relation

of these characteristics to matters of education is so important that I shall venture briefly to speak of them.

During the middle ages the work of the schools was limited to the education of those who were to go into the learned professions. It is even a matter of some doubt whether the great Charles, the organizer of schools in France and Germany could himself write or read. It is certain that one of the greatest of French military leaders, as late as the time when the Renaissance was beginning to dawn, was absolutely illiterate.

Nor was this condition of affairs a singular one, or one that should excite our surprise. Before the introduction of the Baconian philosophy, the methods of looking at the problems of life were the reverse of the methods that have now come to prevail. Aristotle said, "Look into your own minds, study the nature of thought, look into the nature of things, and thus you will be able to reason out the course of conduct you ought to pursue." The Aristotelian philosophy prevailed until the seventeenth century. At length came Bacon and Descartes. Their methods were the opposite. They said, study things not so much in their nature,—which you cannot know anything about by a process of reasoning—as in their characteristics and relations. You are to reason from their external appearance and characteristics which everybody can investigate and in some sense at least understand into their internal natures. Thus it was that the Baconian or *inductive* philosophy had for its aim the setting of all thinking beings to the examining of the things everywhere about them. It taught not only that the domain of thought, but also that the domain of action, was open to the scrutiny of human intelligence. It exhorted everybody to pry into whatever there was within the range of observation. Examine the methods of nature, in order to discover the laws of nature. Examine the habits of animals in order to become acquainted with the laws of their development. Study the rocks, the trees, the plants, the flowers, in fact, study all the domain of nature, in order to discover the secrets of nature. The exhortation was followed in the course of the last century by the birth of what are called the Natural Sciences.

It is not singular that this method immediately began to insist on the examination of institutions as well as the things of nature. Heretofore, the rights of the church, the rights of the king, the rights of all governing powers, rested, not on any evidence that such forms and methods by actual experience had been shown to conduce to the

largest happiness of man, but rather on some preconceived right that was founded on authority either human or divine. But now came a change. The Baconian philosophy taught that men might examine the conduct of government; and they drew the logical inference that if they might examine, they might act on the results of examination. This they did not hesitate to do. It is an interesting fact that the immortal work of Bacon which embodied and put into permanent scientific form the results of his studies and the substance of his philosophy was published in 1620, the very year of the Pilgrims at Plymouth, just twenty-two years before the vigorous outbreak of the English Revolution.

Now what was the educational significance of this movement? Why, simply this. It opened the whole realm of nature as the legitimate field of investigation and study. Before this time the work of the schools and universities had been confined to developing the minds of the pupil and the teaching of the four learned professions--theology, medicine, law, and pedagogy. Universities had been established in the twelfth, thirteenth, fourteenth, and fifteenth centuries in all parts of Europe, but in no one of them were studies carried on in accordance with the modern investigating spirit. This is not strange, for the sciences had not yet been born. They could not come into existence till the investigating or inductive methods of study had come to prevail, and these methods it was that the Baconian philosophy ushered in.

A change of this nature was necessarily slow in making itself observed. But there was here and there a man who caught the new spirit and preached the new doctrine. The most enlightened man of the next generation was Milton. He had in the vast stores of his mind all the wealth of ancient learning. But he saw the full significance of the new philosophy and so every page of his tractate on Education is redolent with the modern spirit. Here are some of his words, "I call therefore a complete and generous education, that which fits a man to perform justly, skillfully, and magnanimously all the offices, both private and public of peace and war." This comprehensive definition might not inaptly be emblazoned as a motto upon the walls of every one of the institutions founded by the Morrill Grant of 1862.

But the doctrine of Milton was slow in permeating educated society. Institutions of learning are proverbially conservative. The universities resisted all change until the necessity of change made

itself everywhere apparent. A century passed on during which the ideas of Bacon and Milton were gradually infiltrating themselves into the minds of the people. Then came the great book of Adam Smith on the Wealth of Nations,—a book which is entitled to this distinction that by combining the Aristotelian with the Baconian methods it sought to establish a science of wealth on a philosophical basis. The premises and the reasoning on which conclusions were founded were not in my judgment without great errors; but the book had its bearings on education scarcely less important than its bearings on political economy and finance. Its teachings were essentially this: the best thing government can do with men, *as a rule*, is simply to protect them against abuses from their fellows, and then let them alone. This doctrine, however faulty,—and civilization is now teaching that it is full of faults,—carried with it this logical conclusion. If it be true, that men will most successfully work out their own fortune and destiny, when not interfered with by government, it follows that they must acquire the general intelligence suitable for self guidance, and, consequently, that far more generous provisions for education must be made than had ever before been provided for.

These doctrines of Adam Smith, moreover, were in complete harmony with what are commonly called the revolutionary doctrines of the latter part of the last century. Jefferson, as well as Adam Smith, preached the doctrine of letting men and things alone. And it was precisely because kings and parliaments and nobles and hereditary lords *would not* let men and things alone, that the revolution came on in America, and, a little later, in France.

There is another phase of the course of events that is worthy of note. While the revolutionary ideas in regard to the proper attitude of government toward the people were taking root there was another revolution going on which had even greater significance. The Baconian doctrine of investigation was beginning to bear fruit. As a consequence the modern sciences had come into being. In all parts of the world every bright boy was looking into things. Every intelligent man was thinking of the ways by which his means of subsistence could be improved. You know the result was the most remarkable succession of inventions that history has ever known anything about. The power loom, the spinning jenny, the application of steam to the driving of machinery, the cotton gin, the invention of the locomotive engine, the building of roads and canals, not only changed the methods of existence from top to bottom, but also made everybody the

near neighbor of everybody else. Contemplate one or two simple facts. At the middle of the last century it was still the regular method of conveying freight in England between London and the interior to put it into crooks thrown across the backs of mules, and send it along the narrow pathways that crossed the country. But what a miracle was soon wrought. When Emerson visited England about the middle of the present century he recorded in his "Notes" that the working power of steam in Great Britain alone, was equal to the strength of six hundred millions of men: and that thirty-six thousand ships were employed in carrying British products to distant parts of the world. What a mighty revolution was that?

It is interesting to note that these two revolutions, the political and philosophical on the one hand, and the social and economic on the other, were strictly contemporaneous. As we said that the date of the *Novum Organum* was the date of the Pilgrims; so we may note that the date of the "Wealth of Nations," and of the patents of Watt and Bolton were all within the years of our revolutionary war.

Now it is a curious fact, that although it was in England that these two revolutions had their origin, it was also in England that the educational results of these revolutions were slowest and latest in making themselves felt. The reason, however, is not far to seek. England was the first to take advantage of the new inventions. Factories had sprung into existence on every hill side and on every stream, and British goods had taken possession of every market in the world. The statesmen in France and Germany saw that nothing but a systematic establishment of technical schools would regain for the nations of the continent the industrial importance which they had lost. And so industrial and technical schools were rapidly established. The *Ecole Polytechnique* came into existence in 1795. A school of similar purpose was established at Chalons in 1802; another at Angers in 1811, and another at Aix in 1843. The still more famous *Ecole Centrale* at Paris came into existence in 1829 with its array of schools for the education of mechanical engineers, civil engineers, chemists and architects. Besides these there were established a vast number of trade schools of every kind, with shops for the teaching of methods of working in wood and iron and brass and other metals. In Paris alone there are more than a hundred such schools open alike to natives and to foreigners.

In Germany the activity in this direction has been even more

marked. Austria has seven great technical schools and Prussia has nine. The new home of the Polytechnic at Berlin, perhaps the finest educational building in the world, has, it is said, accommodations for no less than four thousand students.

Moreover, besides these great centres of the higher grades of technical education, there is a vast number of schools of a more elementary grade. These are grouped about every industrial nucleus in the country. In Hamburg alone nearly a hundred teachers are employed to give instruction in technical and industrial subjects to the thousands of pupils that throng the rooms. At the little mountain city of Chemnitz in Saxony there are five higher technical and trade schools, and so successful have these schools been within the past few years in producing skilled labor, that from the single county of Nottingham, in England, it is said that more than half a score of great manufacturing firms have transferred their machinery to Saxony in order to avail themselves of the superior workmanship that is there offered. And it is in this way that Germany, by means of her technical schools, is taking from England her industrial supremacy.

At last England has come to see her danger. At Manchester, at Sheffield, at Birmingham, and in London technical schools of some merit have recently been established. At last the scholastic tranquility of Cambridge even has been disturbed by the noise of the saws and the lathes and the planing machines of a technical school; and even old Eton, that has rested for centuries in its quiet beauty under the shadows of Windsor Castle, and for centuries has been the favorite school of the scions of nobility, has been obliged to yield to the universal demand. By establishing a technical annex she, however unwillingly, has paid tribute to the inevitable.

But this is only one phase of the general movement. The other, that which pertains to agriculture, is equally striking and equally important.

Agricultural schools were established in Germany early in the present century. But it was not till after Liebig in 1844 published his famous work on "Chemistry as applied to Agriculture" that any real impulse was given to agricultural schools. But Liebig proved beyond the possibility of doubt two things. The one was that however great the draft upon the soil, the fertility may be fully maintained and even increased by restoring to the soil the mineral and the organic matter taken from it at the harvest. The second truth, and one

even more important than the other, was that the proportions and quantities of the ingredients taken up by the crop are so variable and so different under differing circumstances that nothing less than a careful and scientific study of soils will enable one to restore those ingredients in the most efficient and economical proportions. It was accordingly held that for the encouragement of such studies, schools of agriculture must be multiplied.

And from that day to this the number as well as the efficiency of the schools has steadily increased. Prussia alone has four higher agricultural colleges with some eighty professorships; she has more than forty lesser schools, all having model farms; she has five special schools for the cultivation of meadows and the scientific study of methods of irrigation; she has one special school for the teaching of those who desire to reclaim swamp lands; she has two special schools for teaching the growing of fruit trees in industrial nurseries; she has a school for teaching horse-shoeing; one for teaching silk raising; one for the raising of bees; and one for teaching the cultivating of fish. Besides all these she has twenty special schools for the education of gardeners; and fifteen schools for the training of those who are to cultivate the grape.

The example of Prussia has been imitated by the other German states. The little Kingdom of Bavaria, scarcely larger than Massachusetts, has twenty-six agricultural colleges, besides more than two hundred agricultural associations. Württemberg, still smaller in area, has sixteen colleges, and seventy-six associations. Baden, with a population of only a million, has fourteen agricultural colleges besides four schools of gardening and forestry. Saxony, with its dense population of two millions compacted into a space hardly larger than two American counties, has four higher colleges and twenty agricultural schools besides a veterinary college, and a department of agriculture of twenty professors at the University of Leipsic. Saxe Weimar, with a population of no more than 230,000 souls has three agricultural colleges besides an agricultural department with fifteen professorships at the University of Jena.

And what has been the result? Simply this, that while in every one of the American states, as is shown by the agricultural reports, the average crop per acre has been steadily growing less and less,*

*Authority for this statement may be found in the *Report of the Commission of Agriculture for the year 1886*, p. 19. It is there shown that the average yield of the leading cereals, between 1870 and 1879 was considerably greater than that from 1879 to 1885. The diminution is shown by the following figures: The average corn crop declined from 26.8 to 25.1 bushels per acre; Wheat, from 12.5 to 12.1; Oats, from 27.5 to 27.2; Rye, from 14.2 to 12.8; Barley, from 22.4 to 22.08; and Buckwheat, from 17.5 to 13.6.

the average crop in Germany has been as steadily growing more and more. In view of these facts, we ought to bow our heads in humility if not in shame. At least let us cease our unwarranted boasting about the superiority of our educational facilities.

Such have been the tendencies in other parts of the world, and I trust that you will now agree with me in thinking that the Morrill Grant in purpose and in aim was in harmony with the general spirit and the best tendencies of the times.

The third part of my thesis is the proposition that this land grant was fraught with the means of incalculable advantage to the nation.

I am willing to concede that in many cases the avails of the grant were not so large as they should have been. If it were necessary, I would admit that in some instances there was a conflict between private and public interests and that in consequence there was a culpable misuse of the funds; I say "if it were necessary," for I am not aware that any such instances are clearly established.

But if there were even general misuse of the funds, would the fact prove that the grant was unwise? Because there is misuse and extravagance in the building of Post Offices and Custom Houses, do we say that the building of such structures should cease? Do we argue that because there are fraudulent contracts for carrying the mails, therefore contracts for the further carrying of the mails should cease? Do we say that because there are frauds in elections therefore no elections shall be held? No! a thousand times no! We contemplate the good we receive, we determine to prevent the recurrence of abuses in the future, and then we demand those appropriations which the greatest good of the people requires. And so must it be in judging of this great measure.

And now having said so much, I wish to allude to one fact that prevented the large returns from the grant that were anticipated. A majority of the states had no government lands within their borders subject to location under the bill. The consequence was that most of the states were obliged to sell the government scrip at whatever price it would bring. The market was flooded with scrip, and the states found themselves confronted with this dilemma. Either they must sell the scrip at the contemptible price of thirty or fifty cents per acre, or they must postpone the establishment and development of the college. It is not easy perhaps to decide which in this alternative was the wiser course to pursue; certain it is that when the states sold the scrip at a low price they practically gave back to the

people in the way of profit on the lands a large share of what Congress had in the first instance intended for the colleges. It follows that whatever the states lost in selling upon a low market, the people gained in buying, and are in equity through Congress under obligations to restore. Fortunate were those states which, although obliged to sell the scrip, found buyers who were willing to locate the lands and give proper guaranty to turn over the profits to the college established.

But notwithstanding the difficulties in the way of realizing the full value of the Grant, no one, I imagine will have the hardihood to deny that a great, an immense good has been accomplished. Look at a few of the facts and figures. The Land Grant amounted to 17,430,000 acres. The sum realized from the sale of this scrip is reported to have been \$7,545,405. This sum has been greatly increased by additions of grounds, buildings, apparatus, and money given by benevolent individuals. In this way the land scrip fund, which in New York amounted to scarcely more than \$600,000, has been augmented to not less than about \$6,000,000. Though the university to which I refer has, perhaps, been the most fortunate of the land grant institutions, gifts with a similar purpose have likewise increased the endowments in other States. The result is that the latest reports show that these colleges now employ nearly five hundred professors and teachers, and give instruction to some five thousand students. Many of these students have, in turn, become teachers in other schools and colleges. From the institution with which I have the honor to be connected, I recall the names of at least twelve of the graduates who have become professors of some branch of Agriculture in other schools of collegiate grade. In a similar way, the other land grant colleges are disseminating knowledge on those great subjects which were especially named in the bill.

But this, of course, has been but a small part of the work. Thousands of young men, educated in the various branches of Agriculture and Mechanical Science, have gone forth to engage in the practical duties of life, and thus have disseminated and multiplied the knowledge they have received. The work is to go on with ever accelerating vigor, and thus there will be sent out a continued succession for all future time.

There is another feature of the benefits received from this great measure that ought not to be overlooked. I refer to the fact that centres of agricultural knowledge have been established in all the

States of the Union. The science of agriculture, before almost absolutely unknown by the masses of the people has come to be in some measure at last respected and even honored. The agricultural necessities of the country have been made more apparent. To some thousands of young men the stupendous fact is now taught that nature will not be cheated of her rights, and that for everything you take out of the soil, you must put something back, or the time will come when nature's cashier will cease to honor your drafts, and you will end in bankruptcy.

And what a field for such teaching there is ; look at the statistics of our Agricultural Department. In every one of the States, in the North, in the South, in the East and even in the West, the yield per acre of all the great cereal crops has been steadily declining since the early years of the Century. The American farmer has impoverished the soil,—and then gone West. It is not certain that this process has even yet been arrested. The last statistics available for general comparison are not very reassuring. If the New England States have held their own, it has not been by means of improved agriculture, but by the general establishment of manufactories. The same process has been going on that converted many of the fertile lands of Virginia into pine barrens. As we all know too well thousands of acres in the Eastern States have been abandoned as practically worthless. Meanwhile the streams of immigration and emigration have been going on. The Irish and the Germans have come to Massachusetts ; but the farmers of Massachusetts have gone to New York and Ohio, the people of New York and Ohio have gone to Indiana and Illinois, and the people of Indiana and Illinois have gone to Kansas and the farther West. Ever westward has been the movement until the current has been arrested on the slopes of the Pacific. At length there is no West, to whose virgin soil we may flee. Our farmers no longer have the choice between remaining poor or moving toward the setting sun ; they have the other alternative, the one which has long confronted the farmers of the old world, remaining poor or a more perfect knowledge of the conditions under which nature will yield a bounteous and profitable return.

Then look at another fact. In many regions of our country the same desolating process is going on that has reduced the fertile fields about the Mediterranean to sterile deserts. The trees are being swept away and thus we attempt to frustrate the methods by which an all wise Providence designed that the moisture in the deep soil

should be taken up into the plant and cast off into the clouds to be returned again as rain. What has been the result? The rainfall has been diminished, the showers which heaven still does not refuse to furnish, instead of being welcomed by the soft verdure of forests and cultivated fields and lovingly kept in the soil for the good of all animal and plant life, is repelled by parched hill sides, so that it shoots off in angry torrents and is soon once more in the lakes and the great rivers and the oceans beyond. Thus by a perfectly explicable method our climate is undergoing a change and it is the change which in some of the regions of the old world has caused the sands to drift over regions that were once the homes of a prosperous people.

And yet however great the difficulties may seem, there is no tendency of nature that is more amenable to the influence of man's appreciative intelligence. Everybody remembers Emerson's allusion to the ability of the English by the planting of trees on the borders of Egypt to bring rain again after a drought of three thousand years. We have been doing the same thing in the West; for the planting of trees and cornfields in Kansas and Nebraska up to the very frontier has already pushed the rain-line further west by more than a hundred miles. The Reports of the Commissioner of Agriculture are teeming with facts of similar significance. It is estimated, for example, that the loss from the swine plague alone reaches annually some thirty millions of dollars, and that the value of corn and wheat annually destroyed by fungi is not less than the enormous sum of two hundred millions.*

These are some of the lessons and some of the necessities that are taught by experience; and yet they are only hints, as it were, designed to show how vast is the domain that invites the careful study of our schools and colleges. It is into this domain that the people were invited by the wise Land Grant of 1862. It is in this domain that the colleges and universities founded on that grant, if they live up to their high behest, will accomplish results that shall be for the helping, if not for the healing of the nation.

* Report of Commissioner of Agriculture for 1886, pp. 11, 24.

